



DOCKET NO: 240987US3

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

RE APPLICATION OF

KENJI YAMADA, ET AL.

SERIAL NO: 10/629,654

FILED: JULY 30, 2003

FOR: SHEET FINISHER AND IMAGE
FORMING SYSTEM USING THE SAME

:

: EXAMINER: EICKHOLT, E. H.

:

: GROUP ART UNIT: 2854

:

AMENDMENT UNDER 37 C.F.R. § 1.312

*Please
enter in part
R.Y.*

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

In response to the Notice of Allowance dated February 1, 2005, please amend the
application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on
page 2 of this paper.

Remarks begin on page 49 of this paper.

wherein said drive means causes said reinforce roller to move along said guide member.

Do not
enter
claim 50.
R.Y.

Claim 50 (Currently Amended): A sheet finisher for folding a stack of sheets each carrying an image formed thereon, said sheet finisher comprising:

a fold roller pair configured to fold the stack of sheets being conveyed via a nip thereof;

a reinforce roller configured to reinforce a fold of the stack of sheets folded by said fold roller pair between said reinforce roller and a guide plate;

drive means for moving said reinforce roller in a direction perpendicular to a direction of sheet conveyance;

monitoring means for monitoring a movement of said reinforce roller; and

control means for causing, when an error is detected during movement of said reinforce roller, said reinforce roller to move to a home position and causing display means to display a jam message.

Claim 51 (Original): The finisher as claimed in claim 50, wherein said monitoring means comprises:

first sensing means for sensing the home position of said reinforce roller; and

second sensing means for sensing an end-of-reinforcement position where said reinforce roller ends pressing the fold.

Claim 52 (Original): The finisher as claimed in claim 50, wherein when said reinforce roller fails to return to the home position within a preselected period of time, said control means determines that said reinforce roller is fully locked and unable to return and

that and error unable to be dealt with by a user has occurred, while causing said display means to display an error message.

Claim 53 (Original): The finisher as claimed in claim 50, wherein when the error has occurred, said control means inhibits said reinforce roller from pressing a following stack of sheets.

Claim 54 (Currently Amended): An image forming system comprising:

an image forming apparatus comprising image forming means for forming an image on a sheet in accordance with input image data and sheet feeding means for feeding sheets to said image forming means one by one; and

a sheet finisher configured to fold a stack of sheets sequentially transferred from said image forming apparatus;

said sheet finisher comprising:

a fold roller pair configured to fold the stack of sheets being conveyed via a nip thereof;

a reinforce roller configured to reinforce a fold of the stack of sheets folded by said fold roller pair between said reinforce roller and a guide plate;

drive means for moving said reinforce roller in a direction perpendicular to a direction of sheet conveyance;

monitoring means for monitoring a movement of said reinforce roller; and

control means for causing, when an error is detected during movement of said reinforce roller, said reinforce roller to move to a home position and causing display means to display a jam message.

Claim 55 (Original): The system as claimed in claim 54, wherein said display means is included in said image forming apparatus.

Claim 56 (Original): A sheet finisher for folding a stack of sheets each carrying an image formed thereon, said sheet finisher comprising:

a fold roller pair configured to fold the stack of sheets being conveyed via a nip thereof;

a reinforce roller configured to reinforce a fold of the stack of sheets folded by said fold roller pair between said reinforce roller and a guide plate; and

drive means for moving said reinforce roller in a direction perpendicular to a direction of sheet conveyance;

wherein said drive means causes a moving speed of said reinforce roller to vary from a time when said reinforce roller contacts the stack to a time when said reinforce roller does not contact said stack.

Claim 57 (Original): The finisher as claimed in claim 56, wherein said drive means causes said reinforce roller to move at a lower speed when getting on the stack than when rolling on said stack.

Claim 58 (Original): The finisher as claimed in claim 57, wherein said drive means increases the moving speed of said reinforce roller to a preselected speed after said reinforce roller has got on the stack.

Claim 59 (Currently Amended): The finisher as claimed in claim 56, wherein assuming that said reinforce roller moves at a speed V_1 before getting on the stack, at a speed

Do not
enter
claim 59.
R.Y.

V2 when getting on said stack, at a speed V3 before coming down from said stack, at a speed V4 when coming down from said stack and at a speed V6 after coming down from said stack, then said drive means satisfies:

$$V1 \geq V2$$

$$V6 \geq V4$$

$$V3 > V2, V4,$$

Claim 60 (Original): The finisher as claimed in claim 56, wherein said drive means causes said reinforce roller to move at a higher speed when the stack is absent than when said stack is present.

Claim 61 (Original): An image forming system comprising:

an image forming apparatus comprising image forming means for forming an image on a sheet in accordance with input image data and sheet feeding means for feeding sheets to said image forming means one by one; and

a sheet finisher configured to fold a stack of sheets sequentially transferred from said image forming apparatus;

said sheet finisher comprising:

a fold roller pair configured to fold the stack of sheets being conveyed via a nip thereof;

a reinforce roller configured to reinforce a fold of the stack of sheets folded by said fold roller pair between said reinforce roller and a guide plate; and

drive means for moving said reinforce roller in a direction perpendicular to a direction of sheet conveyance;